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New data on Pliocene phasianids (*Aves: Phasianidae*) of Moldavia and S. Ukraine

[with Pl. XVIII and 5 text-figs]

Nowe dane o plioceńskich kurakach (*Aves: Phasianidae*) Moldawii
i Południowej Ukrainy

Abstract: 14 bone fragments of 3 fossil phasianids were found in 5 localities of Moldavia and South Ukraine in the sixties. 4 localities (Etulya, Kotlovina, Chishmikiy and Lucheshty) are dated back to Moldavian Roussillon, the lower part of the Upper Pliocene, correlated with Astian of Western Europe; the 5th locality Voinichevo, is a little older. The majority of remnants belong to *Plioperdix ponticus* (TUGARINOV, 1940). The other two pieces are described as *Pavo moldavicus* sp. n. and *Phasianus etuliensis* sp. n.

Some dozens of bird remains were found in a few different localities in Soviet Moldavia and South Ukraine. They were collected by Dr L. I. KHOSATZKY, Dr N. A. KONSTANTINOVA and Dr I. M. GANEA in the sixties (1963—1966) and passed us in order to describe them. They belong to the scientific collection of the Paleontological Institute of the USSR Academy of Sciences in Moscow. The preliminary note about them was published by KHOSATZKY and KUROCHKIN (1977). All these bone fragments represent the following bird orders: *Anseriformes*, *Falconiformes*, *Galliformes*, *Ralliformes* and *Coraciiformes*. Only *Ralliformes* (*Otididae* and *Gryzajidae*) have been described by now in details (BOCHENSKI, KUROCHKIN, in press).

The present paper deals with the remains of phasianids from Moldavia (localities: Etulya, Chishmikiy and Lucheshty) and South Ukraine (Kotlovina and Voinichevo) (Fig. 1). The deposits at Etulya, Chishmikiy, Lucheshty and Kotlovina are, according to ALEXEEVA (1969) dated back to Moldavian faunistic complex, so called Moldavian Roussillon, which is correlated with Astian

(Levantinian) of Western Europe (KONSTANTINOVA, 1965). Some authors date Moldavian complex as Middle Pliocene (SHEVCHENKO, 1965) or Upper Pliocene (DUBROVO, KAPELIST, 1979) and others include that complex in

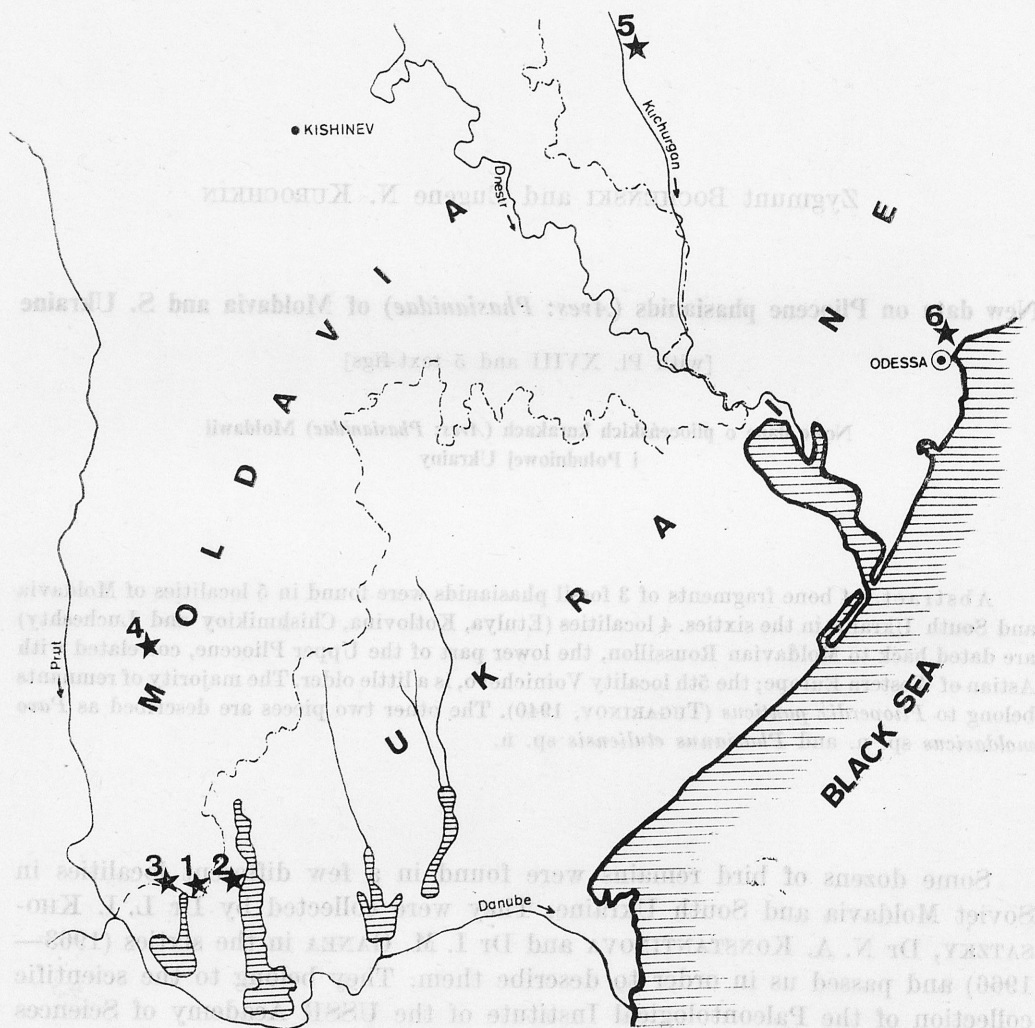


Fig. 1. The localities of Pliocene phasianids in Moldavia and Ukraine mentioned in the present paper: 1 — Etulya, 2 — Kotlovina, 3 — Chishmikiy, 4 — Lucheshty, 5 — Voinichevo, 6 — Odessa catacombs

Eopleistocene (KONSTANTINOVA, 1965; ALEXEEVA, 1969). We accept the age of deposits at those localities as a lower part of the Upper Pliocene. The deposits at Voinichevo are, according to SHEVCHENKO (1965), a little older.

Ordo Galliformes (TEMMINCK, 1820)

Familia Phasianidae HERSFIELD, 1821

Genus *Plioperdix* KRETZOI, 1955

Synonyms: *Ammoperdix*: TUGARINOV, 1940, p. 311,

Pliogallus: TUGARINOV, 1940, p. 312,

Plioperdix: KRETZOI, 1955, p. 367,

Plioperdix: BRODKORB, 1964, p. 317,

Ammoperdix: BRODKORB, 1964, p. 318.

Type species — *Plioperdix ponticus* (TUGARINOV, 1940); Upper Pliocene; South-western Ukraine, southern Moldavia, southern part of Buryat Autonomic SSR in Transbaikalia.

Diagnosis. The transverse section of the tarsometatarsus shaft is almost quadrangle. Its trochleas are drawn to each other, especially trochlea metatarsi secundi is closely drawn to trochlea metatarsi tertii. The lateral side of the former trochlea overlaps the medial side of trochlea metatarsi tertii in the plantar view. Trochlea metatarsi secundi protrudes plantarly in its almost entire height. The distal extension of hypotarsus looks like a short and not elevated ridge along the middle of the shaft. Crista lateralis hypotarsi is elevated. Distal opening of the lateral hypotarsal canal is situated in the above mentioned extension of hypotarsus. Distal ending of tibiotarsus is enlarged transversely but condylus medialis is compressed noticeably from side to side. The proximal articular end of femur has not got any elevated dorso-cranial wing of trochanter femoris; the lateral side of the head is not widened in the cranial-caudal direction; the shaft of femur is almost straight. Facies articularis clavicularis of the coracoid has a flat ventral edge and at the caudal angle of the facies there is not a hook which is observed in many other genera; the facet of ligamental attachment at the medio-ventral angle of the cranial surface of acrocoracoid is flat and small. The distal part of crista pectoralis humeri ends with a sharp step; the dorsal border of the deep fossa tricipitalis comes to eminentia musculi latissimi dorsi posterioris. Epicondylus medialis of distal humerus epyphisis is sharpened distally; impressio ligamenti collateralis ventralis and eminentia musculi metacarpi radialis are low. Processus intermetacarpalis carpometacarpi is delicate, os metacarpale minus is thin; the distal ending of os metacarpale minus has a well expressed small fossa on the ventral side.

Species composition. Only one species, *P. ponticus*, was widely distributed in Upper Pliocene of Ukraine, Moldavia and Transbaikalia. Obviously all references to *P. coturnoides* from many Pliocene localities of Ukraine (DUBROVO, KAPELIST, 1979) and from Moldavian Roussillon (KHOZATSKY, KUROCHKIN, 1977) concern to *P. ponticus*.

Comparison. The bones of *Plioperdix* were compared with those of 18 genera of the recent *Phasianidae*. The bird described is the most similar to *Coturnix* and *Excalfactoria*. Unfortunately, we were not able to compare *Plioperdix*

with small African and Asiatic genera such as *Pternistes*, *Perdicula*, *Cryptoplectron* and *Tropicoperdix*. We compared also *Plioperdix* with Neogene genera *Pala-eortyx*, *Palaeocryptonyx*, *Palaeoperdix* and *Bantamys* (with original remnants, casts and in a few cases with their descriptions only). The detailed comparison is published by KUROCHKIN (1985).

Remarks. *Plioperdix ponticus* was widely distributed in Upper Pliocene. Its original description and drawings however do not permit to investigate reliably other materials. Therefore we carried out here a detailed analysis of its taxonomy, generic and specific characteristics.

TUGARINOV (1940) described the carpometacarpus of a new genus and species *Pliogallus coturnoides* from Pliocene deposits of Odessa catacombs. KRETZOI (1955) explained that the name *Pliogallus* had been preoccupied by GAILLARD (1939) and proposed the name *Plioperdix* which was accepted by BRODKORB (1964) in his Catalogue of fossil birds.

In the same paper, on the preceding page, TUGARINOV (1940) described another new fossil species in recent genus i. e. *Ammoperdix ponticus*, of which almost the complete tarsometatarsus was a single bone which was a holotype in the same time. Original materials of *P. coturnoides* might have been lost. The holotype of *ponticus* is now stored at the collection of the Institute of Zoology in Kiev.

BRODKORB (1964) included in the genus *Plioperdix* three other phasianid species: *P. grivensis* (LYDEKKER, 1893), *P. depereti* (ENNOUCHI, 1930) and *P. jo-leaudi* (ENNOUCHI, 1930). Next BALLMANN (1969) returned those species to the genus *Palaeortyx* and in the same paper confirmed the independence of the genus *Plioperdix*.

We find out on the basis of the present rich material that *ponticus* and *coturnoides*, described on different bones of skeleton represent the same species, and that its older synonym is *ponticus*.

Plioperdix ponticus (TUGARINOV, 1940)

(Pl. XVIII, Phot. 1—12)

Synonyms: *Ammoperdix ponticus*: TUGARINOV, 1940, p. 311

Pliogallus coturnoides: TUGARINOV, 1940, p. 312

Plioperdix coturnoides: BRODKORB, 1964, p. 317

Ammoperdix ponticus: BRODKORB, 1964: p. 318

Plioperdix ponticus: KUROCHKIN, 1985, p. 100

Holotype. Institute of Zoology of the Ukrainian SSR Academy of Sciences in Kiev, N. 6489; right tarsometatarsus with broken proximal articular part; Ukraine, Odessa, catacombs; Upper Pliocene.

Additional materials. Series of fragments of *P. ponticus* from different sites of Moldavia, Ukraine, Transbaikalia, stored in the collection of PIN; all of them coming from Upper Pliocene (Moldavian Roussillon and Chikoy suite).

Table I

The measurements (in mm) of the leg bones of *Platyperdix ponticus* from Ukraine, Moldavia and East Asia. The manner of measuring is shown in Fig. 2

Collection *, number and proveniention	Measurements as in Fig. 2																	
	tarsometatarsus										tibiotarsus					femur		
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
ZIUAN, 6489, Odessa (holo- type)	—	—	5.2	—	—	2.7	2.1	5.1	2.3	1.5								
PIN, 2614-64, Kotlovina	28.4	5.2	—	2.5	2.4	~ 2.6	—	4.1	2.3	1.6								
PIN, 2614-63, Chishmikiyov	—	—	5.3	—	2.4	2.4	2.1	3.3	2.3	1.4								
PIN, 2614-138, Kotlovina	—	—	—	—	—	~ 2.4	2.1	4.0	—	—								
PIN, 2614-146, Voinichevo	—	—	5.5	—	—	2.7	2.3	4.3	2.3	1.4								
PIN, 2975-112, Beregovaya	—	—	—	—	—	2.4	2.0	4.2	—	1.5								
PIN, 2975-119, Beregovaya	—	—	—	—	—						5.0	5.0	4.4	3.0				
PIN, 2975-126, Beregovaya															7.2	2.6	2.5	5.4
PIN, 2975-125, Beregovaya															7.2	3.0	2.6	—
PIN, 2975-124, Beregovaya															7.1	2.7	2.5	—

* Abbreviations: PIN — Paleontological Institute USSR Academy of Sc. in Moscow, ZIUAN — Zoological Institute Ukrainian Academy of Sc. in Kiev.

The materials from Moldavia and Ukraine. Humerus — distal left epiphysis N 2614-51, -62, -66 (Etulya), N 2614-145 (Voinichevo), proximal right epiphysis N 2614-59 (Etulya); carpometacarpus — proximal right epiphysis N 2614-137 (Kotlovina), distal right portion N 2614-50 (Etulya); scapula — cranial right

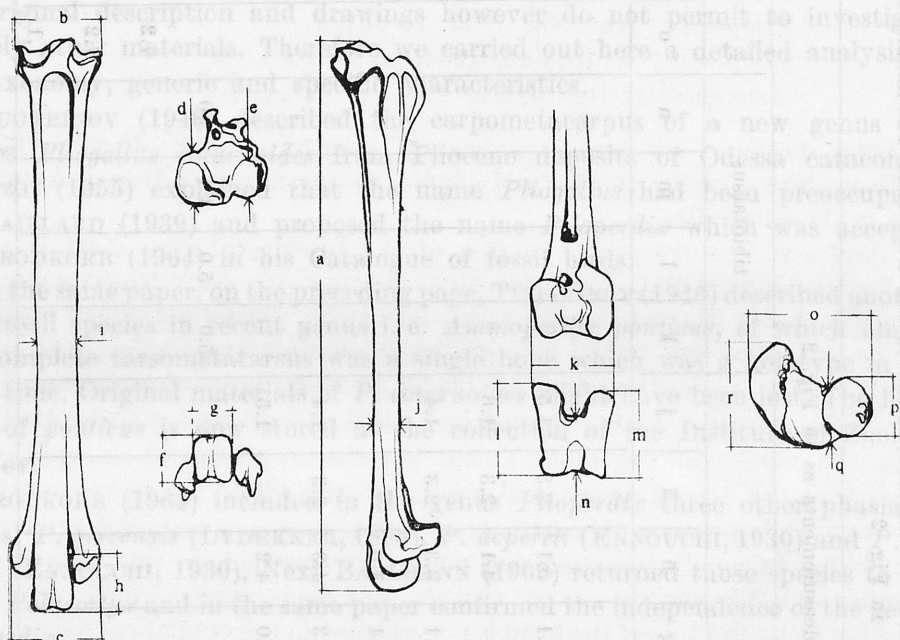


Fig. 2. The manner of measuring of the leg bones in *Plioperdix ponticus* (ref. to Table I) Tarsometatarsus: a — total length, b — width of proximal articular part, c — width of distal articular part, d — length of medial fovea atric. intertarsae, e — length of lateral fovea art. intertarsae, f — horizontal diameter of trochlea of 3rd toe, g — width of trochlea of 3rd toe, h — distance from distal canal to top of trochlea of 3rd toe, i — smallest width of bone shaft, j — smallest thickness of bone shaft; tibiotarsus: k — width of distal articular part, l — horizontal diameter of medial condyle, m — horizontal diameter of lateral condyle, n — thickness of articular portion in incisura intercondyloidea, femur: o — width of proximal articular part, p — horizontal diameter of head, q — horizontal diameter of neck, r — thickness of total articular portion

portion N 2614-139 (Kotlovina); tarsometatarsus — almost complete left N 2614-64 (Kotlovina), left without proximal epiphysis N 2614-63 (Chishmikiy) and right N 2614-146 (Voinichevo), right distal epiphysis N 2614-138 (Kotlovina). These bones were collected in 1963—1966 by L. I. KHOSATZKY, N. A. KONSTANTINOVA, and I. M. GANEA. Materials from Transbaikalia. M. A. ERBAEVA collected a lot of bird bones in 1963 and 1967 at the locality Beregovaya in the valley of the river Chikoy, Southern Transbaikalia, whose geological age was determined as Upper Pliocene, Chikoy Suite (or Lower Eopleistocene of other geologists) which is correlated with Moldavian Roussillon in the West (VANGENGELM, ZAZHIGIN, 1969). Among numerous bird bones which we received

from Beregovaya some remnants of a small phasianid are stored now in the PIN collection. Its tarsometatarsus is not different from western *Plioperdix ponticus*. There are totally eleven different fragments of humerus, coracoid, femur, tibiotarsus and tarsometatarsus from this locality, described and drawn by KUROCHKIN (1985).

Diagnosis. As for the genus.

Measurements. In Tables I and II.

Comparison. Genus *Plioperdix* contains only one species.

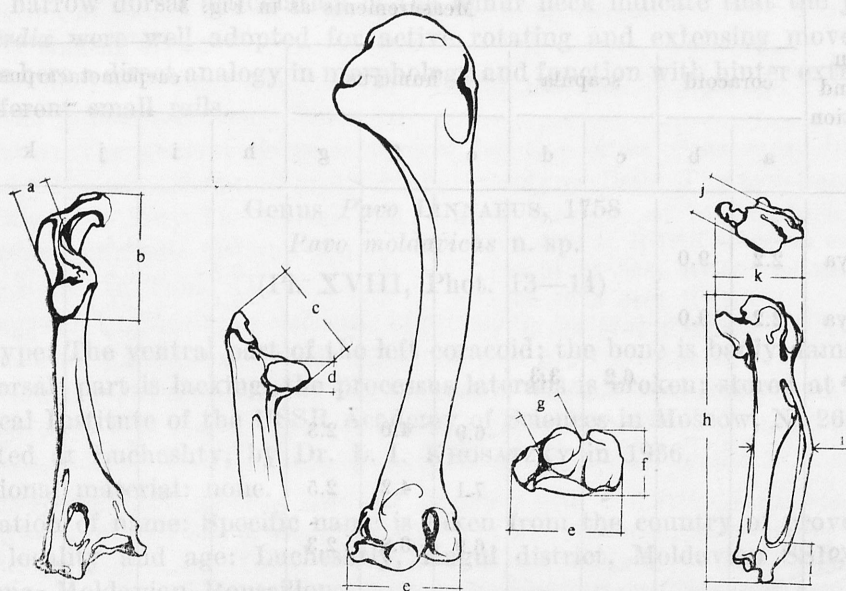


Fig. 3. The manner of measuring of the wing bones of *Plioperdix ponticus* (ref. to Table II). Coracoid: a — width of facies artic. humeralis, b — length of dorsal epiphysis; scapula: c — total length of articular portion, d — width of facies artic. humeralis; humerus: e — width of distal epiphysis, f — thickness of distal epiphysis, g — width of ulnar condyle; carpometacarpus: h — total length, i — largest width in medial part of bone, j — thickness of carpal trochlea, k — width of proximal articular part, l — length of distal symphysis

Remarks. Numerous remnants of the small quail coming from different Upper Pliocene sites of Moldavia, Ukraine and Transbaikalia were compared with one another and with the recent quails and partridges. This investigation indicate that all these bones belong to the same species of the small quail of separated genus which had been described by TUGARINOV (1940). This genus differs sharply from all recent and Neogene phasianids. It takes a generic name *Plioperdix* given by KRETZOI (1955). The specific name is *ponticus*, as an older synonym, as it had been printed on the last page before *coturnoides*.

P. coturnoides was described by TUGARINOV (1940) from the carpometacarpus, and *ponticus* from the tarsometatarsus. Both of these bones show a large similarity to the recent *Coturnix*. TUGARINOV (1940) included *ponticus* in the

genus *Ammoperdix*. We must say that this fossil bird, described from tarso-metatarsus cannot belong to the genus *Ammoperdix* because of the following features: trochleas drawn together, more robust plantar side of the shaft and absence of sharp distal continuation of the hypotarsus on the bone shaft.

Table II

The measurements (in mm) of the wing bones of *Plioperdix ponticus* from Ukraine, Moldavia, and East Asia, stored in PIN. The manner of measuring is shown in Fig. 3

Collection number and proveniention	Measurements as in Fig. 3											
	coracoid		scapula		humerus			carpometacarpus				
	a	b	c	d	e	f	g	h	i	j	k	l
2975-122, Beregovaya	2.2	9.0										
2975-120, Beregovaya	2.2	9.0										
2614-139, Kotlovina			6.2	3.3								
2614-66, Etulya					6.9	4.0	2.3					
2614-51, Etulya					7.1	4.2	2.5					
2614-145, Voinichevo					6.9	3.8	2.3					
2975-96, Beregovaya					6.9	3.8	2.4					
2975-132, Beregovaya					—	3.8	2.5					
2614-137, Kotlovina								—	—	2.3	5.7	—
2975-106, Beregovaya								20.9	4.0	2.5	5.6	3.7
2975-107, Beregovaya								—	3.6	—	—	4.0

The corresponding bones of *Plioperdix ponticus* from various sites present full similarities. The different skeletal elements have suitable sizes to be included into one phasianid species which was a little larger than the recent Common Quail.

Plioperdix was very distinctive morphologically and we can see it partly in the genus diagnosis. We cannot find its direct relationship with recent phasianids. So, most probably, *Plioperdix* extincted after Late Pliocene without descendants. On the other hand we notice a relationship between *Plioperdix* and *Bantamyx* from the Middle Pliocene of Mongolia.

Comparing the measurements of wing and leg bones of *Plioperdix ponticus* and the recent *Coturnix coturnix* and *Ammoperdix griseogularis* it seems that *Plioperdix* had relatively longer wings than legs. It shows apparently that *Plioperdix* flew better than the recent Common Quail and See-see Partridge. *Plioperdix* may have been used to flying more often and at longer distances. Peculiar structures of hinter extremities indicate that they were adopted to a fast and long-term running. The trochleas drawn together and plantar protruding of the trochlea for the second digit in tarsometatarsus, enlarging distal epiphysis and narrowness of medial condyle in tibiotarsus, a small trochanter and a narrow dorsal articulation of the femur neck indicate that the joins of *Plioperdix* were well adopted for active rotating and extending movements. We see here a direct analogy in morphology and function with hinter extremities of different small rails.

Genus *Pavo* LINNAEUS, 1758

Pavo moldavicus n. sp.

(Pl. XVIII, Phot. 13—14)

Holotype: The ventral part of the left coracoid; the bone is badly damaged — the dorsal part is lacking, the processus lateralis is broken; stored at Paleontological Institute of the USSR Academy of Sciences in Moscow, N° 2614—53; collected at Lucheshty, by Dr. L. I. KHOSATZKY in 1966.

Additional material: none.

Derivation of name: Specific name is taken from the country of provenience. Type locality and age: Lucheshty, Kagul district, Moldavian SSR, Upper Pliocene, Moldavian Roussillon.

Diagnosis: The general shape is typical for genus *Pavo*. The size is distinctly larger than any living species (15% larger than the largest bone of *P. muticus*). The medial part of the parasternal articulate is distinctly wide. At the internal side of the bone the dorsal part of facies articularis sternalis is shallow and its dorsal ridge does not reach the angulus of the medial process.

Dimensions: In Table III.

Comparison. The bone was compared with the following genera of gallinaceous birds: *Tetrao*, *Tetraogallus*, *Penelope*, *Mitu*, *Alectura*, *Numida*, *Acryllium*, *Meleagris*, *Lophura*, *Crossoptilon*, *Gallus*, *Pavo* and *Afropavo*. The coracoids of the last two genera are the most similar to the fossil bone. Their measurements are given in Table III. The contour and size of the foramen pneumaticus in the recent *Pavo* is varying from one specimen to another. Also the outlines of the medial ending of the sternal portion of coracoid varies a lot. In the fossil bone it is cut specifically more or less straight and the similar shape is observed only in one of the coracoids of *P. muticus* (British Museum, N° 1951. 8. 16.22). At the inner bone surface in fossil *Pavo moldavicus*, the facies articularis sternalis is comparably more shallow than in the recent *Pavo*. The dorsal ridge of this

facies does not reach the medial angle as it is observed in the recent species of the genus *Pavo*.

Remarks. BRODKORB (1964) does not mention fossil and subfossil remnants of the genus *Pavo*. We have not found any description of fossil Peacock published.

Table III

A comparison of the measurements (in mm) of the coracoid in *Pavo moldavicus* sp. n. and the recent species of peacocks. The manner of measuring is shown in Fig. 4

Species, collection* and number	Measurements as in Fig. 4		
	a	b	c
<i>Pavo moldavicus</i> sp. n. PIN: 2614-53	7.5	6.9	ca 18.5
Recent birds:			
<i>Afropavo congensis</i> BMNH S. 1977. 20. 1	4.9	4.4	ca 9.8
<i>Pavo cristatus</i> BMNH 1856. 12. 10. 811	6.2	5.8	ca 12.7
BMNH 1846. 5. 27. 59	5.4	5.0	**
BMNH S/1973. 66. 68	5.9	5.5	ca 11.1
PIN 35-1 ♀	5.0	4.5	**
ZZSiD A/4197/85 ♀	6.1	6.1	**
<i>Pavo muticus</i> BMNH 1851. 8. 16. 22	6.5	6.1	12.2
BMNH 1847. 12. 11. 13	6.1	5.4	**

* Abbreviations: BMNH — British Museum Nat. Hist. Subdept. of Ornithology at Tring, PIN — Paleontological Institute USSR Academy of Sciences in Moscow, ZZSiD — Institute of Syst. and Exper. Zoology, Pol. Ac. Sc. in Kraków.

** Foramen pneumaticus not distinctly formed or absent at all.

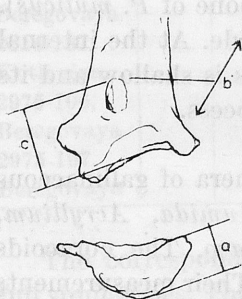


Fig. 4. The manner of measuring of coracoid in *Pavo moldavicus* (ref. to Table III). a — thickness of parasternal articular part, b — thinnest thickness of bone shaft, c — distance between distal margin of pneumatic foramen and parasternal articular part

later on than 1964. On the other hand, *Parapavo californicus* (MÜLLER, 1909) described from the Upper Pleistocene deposits of California has, according to LAMBRECHT (1933) a coracoid similar to *Meleagridae*. BRODKORB (1964) included it in *Meleagrinae* and next STAEDMAN (1980) stated that it was a synonym of the recent *Meleagris gallopavo*.

Genus *Phasianus* LINNAEUS, 1758*Phasianus etuliensis* n. sp.

(Pl. XVIII, Phot. 15—16)

Holotype: The dorsal part (half) of right coracoid; stored at Paleontological Institute of the USSR Academy of Sciences in Moscow, N° 2614—48; collected at Etulya, by Dr L. I. KHOSATZKY in 1964.

Additional material: none.

Derivation of name: Specific name is taken from the name of the locality the bone is coming from.

Type locality and age: Etulya, Vulkaneshty district, Moldavian SSR, Upper Pliocene, Moldavian Roussillon.

Diagnosis: The general shape is typical for the genus *Phasianus*. Impressio m. bicipitis is stretched and protrudes noticeably medially. The facies articularis clavicularis is low. The dorsal and ventral margins of impressio ligamenti acrocoracohumeralis are sharpened.

Dimensions: In Table IV.

Comparison. In *Phasianus etuliensis* impressio m. bicipitalis is distinctly different from one of *P. colchicus* by the stretched and protruding outlines. *P. colchicus* has marked more roundline of this impressio. The facies articularis clavicularis in medial view is low in fossil but raised cranially and wider in *P. colchicus*. They also differ by the sharpened margins of impressio ligamenti acrocoracohumeralis in *P. etuliensis*, especially by the sharp and narrow dorsal margin. The general size of the whole dorsal part of the bone (measurements "a", "b" and "c" in Fig. 5 and Table IV) is similar to that in *P. colchicus*, lying near its lower limits. On the other hand, the height of the acrocoracoid process (measurement "d") is distinctly smaller.

The coracoid of *Phasianus etuliensis* n. sp. cannot be directly compared with the corresponding bones of the other fossil representatives of the genus *Phasianus* i. e. *Phasianus archiaci* GAUDRY, 1862, and *P. hermonis* BATE, 1927. In the case of *P. archiaci* from Lower Pleistocene of Pikermi, GAUDRY (1862) mentions the coracoid giving dimensions of the studying bones: one measurement ("largeur") is given without any information how it was done. There is also no illustration of the bone. On the other hand, however, the measurements of the other bones such as humerus and ulna, compared with those given by ERBERSDOBLER (1968) for the recent *Phasianus colchicus* show that *P. archiaci* was distinctly larger than the recent Pheasant. And so, *P. etuliensis* being a small bird, cannot represent the same species.

In Middle Pleistocene *Phasianus hermoni* the coracoid has not yet been known. The sizes of tarsometatarsus, its total length and width of the proximal articular ending, cited by TCHERNOW (1962) again compared with the corresponding sizes of *P. colchicus* given by ERBERSDOBLER (1968) show also *P. hermoni* as a bird larger than *P. colchicus*, and for the same reason distinctly larger

Table IV

A comparison of the measurements (in mm) of the coracoid in *Phasianus etuliensis* n. sp. and the recent species of Western Palaearctic *Phasianinae*. The manner of measuring is shown in fig. 5

Species, collection * and number	Measurements as in Fig. 5				Index: d × 100 c
	a	b	c	d	
<i>Phasianus etuliensis</i> sp. n. PIN: 2614-48	15.2	10.0	6.7	3.7	55.2
Recent species:					
<i>Alectoris chukar</i> ♂ PIN 11-1	14.7	9.2	6.0	4.0	66.66
♂ PIN 11-4	12.6	8.5	5.2	3.7	71.15
♀ ZZSiD A/1530/65	10.9	7.6	4.5	3.3	73.33
<i>Alectoris graeca</i> ♂ ZZSiD A/3296/76	12.9	8.5	5.5	3.6	65.45
? ZZSiD A/3259/76	12.2	8.7	5.2	3.7	71.15
<i>Alectoris rufa</i> ♂ ZZSiD A/3713/80	12.4	8.1	5.3	3.8	71.69
♀? ZZSiD A/3979/83	11.6	7.8	4.7	3.1	65.95
<i>Francolinus francolinus</i> ♂ PIN 12-1	11.1	7.0	4.7	2.7	57.45
♂ ZZSiD A/3182/76	12.8	8.1	5.4	3.5	64.81
<i>Phasianus colchicus</i> ♂ PIN 18-1	16.4	11.7	7.0	4.2	60.0
♀ PIN 18-2	15.1	10.7	6.3	4.1	65.08
♂ PIN 18-3	19.0	12.7	8.2	5.3	64.63
♂ ZZSiD A/3518/78	19.5	11.1	8.0	5.4	67.50
♂ ZZSiD A/2200/70	18.3	12.4	8.2	5.4	65.85
♀ ZZSiD A/3820/81	16.2	10.8	7.1	4.4	61.97
♀ ZZSiD A/1328/64	15.6	10.0	6.6	4.3	65.15
<i>Perdix perdix</i> ♀ ZZSiD A/445/62	11.2	7.6	5.4	3.1	57.41
? ZZSiD A/3474/78	12.3	8.2	4.9	3.9	69.39
<i>Coturnix coturnix</i> ZZSiD A/2449/71	6.9	4.8	2.8	1.7	60.71
<i>Ammoperdix griseogularis</i> ZZSiD A/3181/76	9.0	5.7	3.6	2.6	72.22

* Abbreviations: PIN — Paleontological Institute USSR Academy of Sc. in Moscow
ZZSiD — Institute of Syst. and Exper. Zoology, Pol. Ac. Sc. in Kraków.

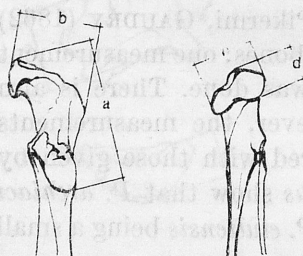


Fig. 5. The manner of measuring of the coracoid in *Phasianus etuliensis* (ref. to Table IV). a — length of dorsal epiphysis, b — distance between acrocoracoid and tuberositas humeralis, c — width of acrocoracoid, d — height of acrocoracoid

than *Phasianus etuliensis*. The difference of the geological age excludes also the possibility of belonging both of these birds to the same species.

Remarks. The bone fragment was compared with the following Eurasiatic phasianid genera: *Gallus*, *Phasianus*, *Tetraogallus*, *Alectoris*, *Francolinus*,

Coturnix, *Lophura*, *Chrysolophus* and *Syrnathicus*. Apart of size differences, the morphological character of processus acrocoracoideus and facies articularis clavicularis as well as labrum glenoidae exclude all those genera but *Phasianus*. The proportions between lateral and medial slopes of acrocoracoid process and the height of labrum point also to *Phasianus*.

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STRESZCZENIE

Praca zawiera opis 14 fragmentów kostnych, należących do 3 gatunków z rodziny *Phasianidae*. Pochodzą one z górnopliocénskich osadów Moldawii i Południowej Ukrainy (ryc. 1).

Nieco większy od współczesnej przepiórki *Plioperdix ponticus* (TUGARINOV 1940) opisany był pierwotnie na podstawie pojedynczych kości jako 2 gatunki: *Pliogallus ponticus* TUGARINOV, 1940 i *Ammoperdix coturnoides* TUGARINOV, 1940. KRETZOI (1955) wykazał, że nazwa *Pliogallus* została już wcześniej użyta i zaproponował nazwę rodzajową *Plioperdix*. Obecne liczne materiały z Moldawii, Ukrainy, a także Zabajkala pozwalają stwierdzić, że obie kości opisane przez TUGARINOVA (1940) należą do tego samego gatunku, którego starszym synonimem jest nazwa *ponticus*. Wybrane okazy *Plioperdix ponticus* (TUGARINOV 1940) łącznie z typem opisowym przedstawione są na fotografiach 1—12 (Pl. XVIII), a ich wymiary w tabelach I i II (sposoby mierzenia kości — ryc. 2 i 3).

Pavo moldavicus n. sp. został opisany na podstawie przymostkowej części kości kruczej (Pl. XVIII, fot. 13—14). Był to duży gatunek pawia, większy od współczesnych przedstawicieli rodzajów *Pavo* i *Afropavo* (tab. III — sposoby mierzenia na ryc. 4).

Trzecim gatunkiem jest *Phasianus etuliensis* n. sp. Jego typem opisowym jest przyłopatkowa część kości kruczej (Pl. XVIII, for. 15—16). Był to mały bażant, którego wymiary leżą w pobliżu dolnej granicy współczesnych przedstawicieli *Phasianus colchicus* (tab. IV — sposoby mierzenia na ryc. 5), różniący się jednak wyraźnie morfologicznie.

Plate XVIII

- Phot. 1—2. Holotype, right tarsometatarsus from *Odessia entellus* (frontal and caudal views). PIN. N. 2814—64.
- Phot. 3—4. Left tarsometatarsus from *Odessia entellus* (dorsal and ventral views). PIN. N. 2814—64.
- Phot. 5—6. Proximal part of right carpalometacarpus (dorsal and ventral views) from *Odessia entellus*. PIN. N. 2814—137.
- Phot. 7—8. Cranial part of right scapula from *Odessia entellus* (lateral and cranial views). PIN. N. 2814—139.
- Phot. 9—10. Distal part of left humerus from *Odessia entellus* (lateral and cranial views). PIN. N. 2814—66.
- Phot. 11—12. Proximal part of right humerus from *Odessia entellus* (lateral and medial views). PIN. N. 2814—59.
- (all photographs 3 × nat. size)
- Pavo moldavicus* n. sp.
- Phot. 13—14. Holotype, left coracoid from *Odessia entellus* (medial view and lateral view). PIN. N. 2814—53.
- Phasianus etuliensis* n. sp.
- Phot. 15—16. Holotype, right coracoid from *Odessia entellus* (cranial and caudal views). PIN. N. 2814—48.
- Phot. 17. *Odessia entellus* n. sp.

13

14

15

16

Plate XVIII

Plioperdix ponticus (TUGARINOV, 1940)

Phot. 1—2. Holotype, right tarsometatarsus from Odessa catacombs (frontal and caudal views),
Inst. of Zoology, Ukrainian Academy of Sciences, N° 6489

Phot. 3—4. Left tarsometatarsus from Kotlovina (frontal and caudal views), PIN, N° 2614—64

Phot. 5—6. Proximal part of right carpometacarpus (dorsal and ventral views) from Kotlovina,
PIN, N° 2614—137

Phot. 7—8. Cranial part of right scapula from Kotlovina (lateral and cranial views), PIN, N°
2614—139

Phot. 9—10. Distal part of left humerus from Etulya (lateral and cranial views), PIN, N°
2614—66

Phot. 11—12. Proximal part of right humerus from Etulya (lateral and medial views), PIN,
N° 2614—59

(all photographs 3 × nat. size)

Pavo moldavicus n. sp.

Phot. 13—14. Holotype, left coracoid from Lucheshty (medial view and facies articularis
sternalis), PIN, N° 2614—53

(2 × nat. size)

Phasianus etuliensis n. sp.

Phot. 15—16. Holotype, right coracoid from Etulya (cranial and caudal views), PIN, N°
2614—48

(3 × nat. size)

Phot. A. TARASENKO

